

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Industrial permit. The industrial wastewater discharge results from the operation of a 79 megawatt (MW) waste-to-energy facility. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1. Facility Name and Mailing Address: Covanta Fairfax, Inc.
9898 Furnace Road
Lorton, VA 22079

Facility Location: 9898 Furnace Road
Lorton, VA 22079

Facility Contact Name: Mr. Scott Drew
Telephone Number: (703) 690-6860

SIC Code : 4953 – Refuse Systems

County: Fairfax
2. Permit No.: VA0090638

Other VPDES Permits associated with this facility: VAR051071 (Industrial Storm Water General Permit)

Other Permits associated with this facility: Air (Title V) – NVRO71920
Air (PSD)* - 71920
Solid Waste – Permit by Rule #545
*PSD is defined as Prevention of Significant Deterioration

E2/E3/E4 Status: E4
3. Owner Name: Covanta Energy
Owner Contact/Title: Mr. Scott Drew / Facility Manager
Telephone Number: (703) 690-6860
4. Application Complete Date: May 20, 2011
Permit Drafted By: Susan Mackert
Date Drafted: August 18, 2011
Draft Permit Reviewed By: Alison Thompson
Date Reviewed: August 30, 2011
WPM Review By: Bryant Thomas
Date Reviewed: September 15, 2011
Public Comment Period : Start Date: October 8, 2011
End Date: November 7, 2011
5. Receiving Waters Information:

Receiving Stream Name : UT to Mills Branch
Stream Code: XMF
Drainage Area at Outfall: 0.12 square miles
River Mile: 000.46
Stream Basin: Potomac River
Subbasin: Potomac River
Section: 7
Stream Class: III
Special Standards: b
Waterbody ID: VAN-A25R
7Q10 Low Flow: 0 MGD
7Q10 High Flow: 0 MGD
1Q10 Low Flow: 0 MGD
1Q10 High Flow: 0 MGD
30Q10 Low Flow: 0 MGD
30Q10 High Flow: 0 MGD
Harmonic Mean Flow: 0 MGD
30Q5 Flow: 0 MGD
303(d) Listed: Receiving Stream - No
303(d) Listed: Downstream (Mills Branch) – Yes (recreation, fish consumption)
303(d) Listed: Downstream (Occoquan River) – Yes (recreation, fish consumption)
TMDL Approved: Receiving Stream - NA
TMDL Approved: Downstream (Mills Branch) -Yes
Date TMDL Approved: 2007 (PCBs)
TMDL Approved: Downstream (Occoquan River) -Yes
Date TMDL Approved: 2007 (PCBs)

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law	<input type="checkbox"/> EPA Guidelines
<input checked="" type="checkbox"/> Clean Water Act	<input checked="" type="checkbox"/> Water Quality Standards
<input checked="" type="checkbox"/> VPDES Permit Regulation	<input checked="" type="checkbox"/> Other 9VAC25-196 (General Permit for Non-Contact Cooling Water Discharges)
<input checked="" type="checkbox"/> EPA NPDES Regulation	

7. Licensed Operator Requirements: NA

8. Reliability Class: NA

9. Permit Characterization:

<input checked="" type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input checked="" type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input type="checkbox"/> TMDL		

10. Wastewater Sources and Treatment Description:

Covanta Fairfax, Inc. is an Energy from Waste (EfW) facility that produces energy through the combustion of municipal solid waste (MSW). The facility generates approximately 79MW of electricity which is then sold to Dominion Virginia Power. The majority of MSW used by the facility is received from the surrounding Fairfax County communities and the District of Columbia. MSW arrives at the facility by truck and is first weighed and visually screened at the scale house. The MSW is then transported to the tipping floor where it is unloaded and stacked to prevent falling and mixture of fuel. An overhead crane and grapple system picks the MSW from the tipping floor and moves it to one of four feed chutes where the MSW is moved by gravity to reciprocating grates and to the combustors. Under fire and over fire air supports the combustion of the MSW which heats the boilers and produces steam. The pressure and temperature of the steam is increased and directed to the turbines to make electricity.

Potable water from Fairfax County (Lorton/Griffith Water Treatment Plant – VA0002585) is currently used for cooling and steam generation. However, at the time of the permit reissuance the facility was nearing completion of a reuse project with the Noman M. Cole Jr. Pollution Control Plant (VA0025364). This project will allow Covanta Fairfax to utilize treated effluent from the Noman M. Cole Jr. Pollution Control Plant as source water. The project is scheduled for completion in fall 2011. Chemicals are added to both cooling water and boiler feed water to maintain optimal heat transfer efficiency of electric generation systems. Chemicals are added to the water to adjust pH, inhibit corrosion and scale build-up, and to reduce biological growth.

Discharge from the facility is comprised of cooling tower blowdown, neutralization tank discharge and once through cooling water. At this time, all discharge from the facility is sent to the Noman M. Cole Jr. Pollution Control Plant via a lift station and is not discharged through the facility's permitted outfall (001). This has been the practice of the facility since it went online in 1990. Thus the facility has not had a reported discharge during the current permit cycle. Based on information provided by the facility, it does not appear likely that a discharge will occur through Outfall 001 under the proposed permit.

Water collected from floor drains within the boiler building and trench drains located on the air pollution control (APC) deck is directed to two sumps located within the APC deck. This water is then pumped to the ash dischargers. Residue (ash) from the combustion of MSW leaves the boiler via the ash discharger. The discharger is configured with a trough of water through which the ash is cooled. Water used during this process is replenished from the sumps located on the APC deck and isolated from the lift station which directs water to the Noman M. Cole Jr. Pollution Control Plant.

The cooling towers do not possess Copper/Silver anodes so there is no need for dissolved silver monitoring. This is consistent with the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196).

Storm water discharges at the site are addressed through a VPDES General Permit for Storm Water Discharges Associated with Industrial Activity (VAR051071).

See Attachment 1 for the NPDES Permit Rating Worksheet.

See Attachment 2 for a facility schematic/diagram.

TABLE 1 – Outfall Description				
Outfall Number	Discharge Sources	Treatment	Daily Average	Outfall Latitude and Longitude
001	Industrial Wastewater (cooling tower blowdown, neutralization tank discharge, once through cooling water)	See Item 10 above	0.66 MGD	38° 41' 51" N 77° 14' 27" W
See Attachment 3 for (Fort Belvoir, DEQ #193B) topographic map.				

11. Sludge Treatment and Disposal Methods:

Covanta Fairfax is an Energy from Waste facility that produces energy through the combustion of municipal solid waste. The facility does not produce sewage sludge and does not treat domestic sewage.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge in Waterbody VAN-A25R:

The monitoring stations listed below are within a two mile radius of the discharge location. The intake listed below is upstream of the discharge, but is within a five mile radius of the discharge location. Please see Attachment 4 for a list of all other facilities and monitoring stations located within the waterbody VAN-A25R.

TABLE 2	
1aGIL000.76	DEQ ambient monitoring station on Giles Run located on Route 611 (Old Colchester Road).
1aOCC006.64	DEQ ambient monitoring station located on the Occoquan River 0.07 miles below Route 123.
1aOCC006.71	DEQ ambient monitoring station on the Occoquan River located at the Route 123 bridge.
1aOCC006.99	DEQ ambient monitoring station located on the Occoquan River at the footbridge.
1aPOH005.36	DEQ ambient monitoring station on Pohick Creek located on Route 1.
1aWLB000.06	DEQ ambient monitoring station located on Mills Branch at Occoquan Regional Park approximately 1.8 rivermiles downstream from the outfall location.
VA0002585	Intake for Fairfax Water – Lorton/Griffith Water Treatment Plant upstream of discharge point.

13. Material Storage:

TABLE 3 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Activated Carbon	10,000 – 99,999 pounds	Silo (APC Deck)
Ammonia Hydroxide	100,000 – 999,999 pounds	AST
Calcium Hydroxide	10,000 – 99,999 pounds	Tank inside building (APC Deck)
Calcium Magnesium Oxide (Dolomitic Quicklime)	10,000 – 99,999 pounds	AST (APC Deck)
Calcium Oxide (Quick/Pebble Lime)	100,000 – 999,999 pounds	AST (APC Deck)
Fuel Oil No. 2	1,000 – 9,999 pounds	UST, AST
Petroleum Electrical Insulating Oil (Transformer Oil)	100,000 – 999,999 pounds	Not Available
Sodium Hydroxide (ChemTreat BL-1754)	10,000 – 99,999 pounds	Tank (Inside Building)
Sodium Hypochlorite (0.8% Solution)	1,000 – 9,999 pounds	Tank (Inside Building)
Solvent-Dewaxed Heavy Paraffinic Petroleum Distillates (Turbine Oil)	10,000 – 99,999 pounds	Tank (Inside Building)
Stauroilite (Sand Blasting Material)	10,000 – 99,999 pounds	Bag
Sulfuric Acid	10,000 – 99,999 pounds	Tank (Inside Building)

14. Site Inspection:

Performed by Susan Mackert on July 28, 2011. The site visit confirms that the application package received on May 16, 2011, is accurate and representative of actual site conditions. The site visit memo can be found as Attachment 5.

15. Receiving Stream Water Quality and Water Quality Standards:a) Ambient Water Quality Data

The nearest Department of Environmental Quality ambient monitoring station, 1aWLB000.06, is located 1.8 miles downstream on Mills Branch from the outfall location at the Occoquan Regional Park. The receiving stream, an unnamed tributary to Mills Branch, is not listed on the current 303(d) list. Mills Branch is a tributary to the tidal portion of the Occoquan River.

The 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR) gives an impaired classification for the following downstream locations:

- Fish Consumption Use Impairment (PCBs)

Mills Branch: Excursions above the human health criteria of 0.64 ppb PCBs were recorded in two water quality grab samples collected at monitoring station 1aWLB000.06.

Occoquan River: The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 4/19/99, and modified 12/13/04 and 10/7/09, limits consumption of bullhead catfish, channel catfish less

than eighteen inches long, largemouth bass, anadromous (coastal) striped bass, sunfish species, smallmouth bass, white catfish, white perch, gizzard shad, and yellow perch to no more than two meals per month. The advisory also bans consumption of American eel, carp and channel catfish greater than eighteen inches long. The affected area includes the tidal portions of the following tributaries and embayments from the I-395 bridge (above the Woodrow Wilson Bridge) to the Potomac River Bridge at Route 301: Fourmile Run, Hunting Creek, Little Hunting Creek, Pohick Creek, Accotink Creek, Occoquan River, Neabsco Creek, Powells Creek, Quantico Creek, Chopawamsic Creek, Aquia Creek, and Potomac Creek.

The following are carried over from the 2006 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR) as no additional *E. coli* monitoring data has been collected:

- Recreation Use Impairment

Mills Branch: Although the data obtained during the 2006 assessment window shows exceedances of the instantaneous fecal coliform bacteria criterion (1 of 8 samples – 14.3%), and is categorized as having insufficient information, little data has been collected from DEQ's ambient monitoring station 1aWLB000.06 since the previous assessment window. The segment shall remain categorized as impaired.

Occoquan River: Sufficient exceedances of the instantaneous fecal coliform bacteria criterion (2 of 13 samples – 15.4%) were recorded at DEQ's ambient monitoring station 1aOCC006.71 at the Route 123 bridge to assess this stream as not supporting of the recreation use goal for the 2006 water quality assessment.

The following Total Maximum Daily Load (TMDL) schedule has been established.

- Recreation Use – 2014

The following Total Maximum Daily Load (TMDL) schedule has been completed.

- Fish Consumption Use (PCBs) – 2007

The complete planning statement is located within the permit reissuance file.

b) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, an unnamed tributary to Mills Branch, is located within Section 7 of the Potomac River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 6 details other water quality criteria applicable to the receiving stream.

Ammonia:

The fresh water, aquatic life Water Quality Criteria for Ammonia is dependent on the instream temperature and pH. The 90th percentile temperature and pH values are used because they best represent the critical conditions of the receiving stream. Because the 30Q10 and 1Q10 of the receiving stream are 0.0 MGD and there is no effluent pH and no effluent temperature data available, a default temperature value of 25° C and a default pH value of 8.0 S.U. were used to calculate the ammonia water quality standards. The ammonia water quality standards calculations are shown in Attachment 6.

The VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196) requires monitoring without limitation when the source of cooling water is disinfected using chloramines. The Lorton/Griffith Water Treatment Plant does utilize ammonia for treatment and as such, the requirement for ammonia monitoring without limitation would be applicable. However, the use of water from the Lorton/Griffith Water Treatment Plant will cease in fall 2011 when Covanta begins using treated effluent from the Noman M. Cole Jr. Pollution Control Plant. Based on this reuse project, there is no reasonable potential to exceed the ammonia criteria. It is staff's best professional judgement that ammonia limits need not be developed for this discharge.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). The 7Q10 of the receiving stream is zero, there is no ambient data available, and there is no hardness data for this facility. Staff guidance suggests using a default hardness value of 50 mg/L CaCO₃ for streams east of the Blue Ridge. The hardness-dependent metals criteria in Attachment 6 are based on this default value.

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, an unnamed tributary to Mills Branch, is located within Section 7 of the Potomac River Basin. This section has been designated with a special standard of "b".

Special Standard "b" (Potomac Embayment Standards) established effluent standards for all sewage plants discharging into Potomac River embayments and for expansions of existing plants discharging into non-tidal tributaries of these embayments. 9VAC25-415, Policy for the Potomac Embayments controls point source discharges of conventional pollutants into the Virginia embayment waters of the Potomac River, and their tributaries, from the fall line at Chain Bridge in Arlington County to the Route 301 bridge in King George County. The Potomac Embayment Standards are not applied to this discharge as the facility is not a sewage treatment plant and the discharge does not contain the pollutants of concern in appreciable amounts.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on July 25, 2011, for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: Brook Floater, Wood Turtle, Peregrine Falcon, Upland Sandpiper, Loggerhead Shrike, Henslow's Sparrow, Appalachian Grizzled Skipper, Bald Eagle, and Migrant Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and protect the threatened and endangered species found near the discharge.

The stream that the facility discharges to is within a reach identified as having an Anadromous Fish Use. It is staff's best professional judgment that the proposed limits are protective of this use.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the stream having a 7Q10 and 1Q10 of zero. It is staff's best professional judgment that such streams are Tier I since the limits are set to meet the WQS and at times the flow in the stream is comprised entirely of effluent. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data are not available for review. All discharge from the facility is sent to the Noman M. Cole Jr. Pollution Control Plant (VA0025364) via a lift station and is not discharged through the facility's permitted outfall.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:

WLA	=	Wasteload allocation
C _o	=	In-stream water quality criteria
Q _e	=	Design flow
Q _s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
f	=	Decimal fraction of critical flow
C _s	=	Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

The State Water Control Board has adopted a general VPDES permit for point source discharges of cooling water and cooling equipment blowdown to municipal separate storm sewer systems and surface waters (9VAC25-196). An effluent limitation for flow and water quality based effluent limitations for pH, temperature and total residual chlorine have been established under the VPDES General Permit for Cooling Water Discharges. Although Covanta Fairfax, Inc. has not had a discharge under the current permit, the proposed discharge of 0.66 MGD and the use of chemical additives exclude the facility from coverage under the general permit. However, the permit does serve as a guideline on which to develop the facility's effluent limitations and monitoring requirements.

1) Total Residual Chlorine (TRC):

Staff calculated WLAs for TRC using current critical flows. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. TRC limitations are established to prevent impacts (acute and chronic) to aquatic organisms. An instantaneous maximum limit of 0.016 mg/L was calculated based on the chronic aquatic life criterion in Virginia's Water Quality Standards and the WLA derivation in Attachment 5.

However, antibacksliding provisions do not allow relaxation of limitations. As such, the existing maximum limitation of 0.011 mg/L and monthly average limitation of 0.011 mg/L shall be carried forward. This limitation is more stringent than the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196) which requires a TRC limitation of <0.1 mg/L. The TRC limitations shall only be applicable if the source of the facility's cooling water has been chlorinated.

The existing permit requires monitoring for TRC on a monthly basis. With this reissuance the monthly monitoring frequency (1/M) shall be carried forward, but shall only be applicable upon commencement of discharge. Until such time as a discharge takes place, monitoring and reporting is not required. There are no plans for discharge during the 2011 – 2016 permit term.

2) Metals:

Monitoring for Total Dissolved Copper and Total Dissolved Zinc, without specific limitations, shall be carried forward with this reissuance as copper and zinc are common pollutants of concern from this type of industrial discharge. The metals monitoring is consistent with the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196).

The existing permit requires monitoring for Total Dissolved Copper and Total Dissolved Zinc on a monthly basis. With this reissuance the monthly monitoring frequency (1/M) shall be carried forward, but shall only be applicable upon commencement of discharge. Until such time as a discharge takes place, monitoring and reporting is not required. There are no plans for discharge during the 2011 – 2016 permit term.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

1) pH:

No changes to established pH limitations are proposed. As such, a minimum limit of 6.0 S.U. and a maximum limit of 9.0 S.U. shall be carried forward with this reissuance. Limitations for pH are set at the water quality criteria and are consistent with the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196).

The existing permit requires monitoring for pH on a monthly basis. With this reissuance the monthly monitoring frequency (1/M) shall be carried forward, but shall only be applicable upon commencement of discharge. Until such time as a discharge takes place, monitoring and reporting is not required. There are no plans for discharge during the 2011 – 2016 permit term.

2) Temperature:

No changes to established temperatures limitations are proposed. As such, a maximum temperature limit of 32°C shall be carried forward with this reissuance. The limitation for temperature is based upon the Water Quality Standards (9VAC25-260-50) and is consistent with the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196).

The existing permit requires monitoring for temperature on a monthly basis. With this reissuance the monthly monitoring frequency (1/M) shall be carried forward, but shall only be applicable upon commencement of discharge. Until such time as a discharge takes place, monitoring and reporting is not required. There are no plans for discharge during the 2011 – 2016 permit term.

3) Total Hardness:

Monitoring for hardness, without specific limitations, shall be carried forward with this reissuance. The hardness monitoring is consistent with the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196).

The existing permit requires monitoring for hardness on a monthly basis. With this reissuance the monthly monitoring frequency (1/M) shall be carried forward, but shall only be applicable upon commencement of discharge. Until such time as a discharge takes place, monitoring and reporting is not required. There are no plans for discharge during the 2011 – 2016 permit term.

4) Total Phosphorus:

Monitoring for phosphorus, without specific limitations, shall be carried forward with this reissuance. The phosphorus monitoring is consistent with the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196).

The existing permit requires monitoring for phosphorus on a monthly basis. With this reissuance the monthly monitoring frequency (1/M) shall be carried forward, but shall only be applicable upon commencement of discharge. Until such time as a discharge takes place, monitoring and reporting is not required. There are no plans for discharge during the 2011 – 2016 permit term.

e) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, pH, Total Residual Chlorine, and Temperature.

Sample Type is in accordance with the recommendations in the VPDES Permit Manual, and the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196).

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements: Outfall 001 (Cooling Tower Blowdown, Neutralization Tank Discharge, Once Through Cooling Water)

Proposed flow is 0.66 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/M	Estimate
pH	1,3	NA	NA	6.0 S.U.	9.0 S.U.	1/M	Grab
Temperature (°C)	1,3	NA	32°C	NA	NA	1/M	IS
Total Residual Chlorine (mg/L)	1	0.011	0.011	NA	NA	1/M	Grab
Hardness (mg/L as CaCO ₃)	1,3	NA	NL	NA	NA	1/M	Grab
Total Phosphorus (mg/L)	1,3	NA	NL	NA	NA	1/M	Grab
Total Dissolved Copper (µg/L)	1,3	NA	NL	NA	NA	1/M	Grab
Total Dissolved Zinc (µg/L)	1,3	NA	NL	NA	NA	1/M	Grab
Chronic Toxicity – <i>C. dubia</i> (TU _c)	2	NA	NA	NA	NL	1/3M ^(a)	5G/8H
Chronic Toxicity – <i>P. promelas</i> (TU _c)	2	NA	NA	NA	NL	1/3M ^(a)	5G/8H
Acute Toxicity – <i>C. dubia</i> (TU _a)	2	NA	NA	NA	NL	1/3M ^(a)	5G/8H
Acute Toxicity – <i>P. promelas</i> (TU _a)	2	NA	NA	NA	NL	1/3M ^(a)	5G/8H

The basis for the limitations codes are: *MGD* = Million gallons per day.

1/M = Once every month upon commencement of discharge.

1. Water Quality Standards *NA* = Not applicable.

1/3M = Once every three months upon commencement of discharge.

2. Best Professional Judgement *NL* = No limit; monitor and report.

3. 9VAC25-196 (General Permit for Non-Contact Cooling Water Discharges) *S.U.* = Standard units.

IS = Immersion stabilization.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

5G/8H = 5 Grab/Eight Hour Composite - Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time intervals for the duration of the discharge if the discharge is less than eight (8) hours in length.

a. The quarterly monitoring period is not defined as monitoring is dependent upon the date of the first discharge to surface waters.

20. Other Permit Requirements:

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

- b) Permit Section Part I.C., details the requirements for Whole Effluent Toxicity.

The VPDES Permit Regulation at 9VAC25-31-210 requires monitoring and 9VAC25-31-220.I, requires limitations in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. A Whole Effluent Toxicity (WET) program is imposed for municipal facilities with a design rate >1.0 MGD, with an approved pretreatment program or required to develop a pretreatment program, or those determined by the Board based on effluent variability, compliance history, Industrial Waste Concentration (IWC), and receiving stream characteristics.

Covanta Fairfax is an industrial discharger with an effluent that may be potentially toxic. It is staff's best professional judgement that the requirement to conduct toxicity testing in the event of a discharge to surface waters be carried forward with this reissuance.

The existing permit requires semi-annual chronic toxicity testing commencing within ninety (90) days from the initiation of a discharge and lasting for the duration of the permit using *C. dubia* and *P. promelas* as the test species. In accordance with current agency toxicity management program guidance, the permittee shall initiate quarterly acute and chronic toxicity tests ninety (90) days after commencement of a discharge to surface waters from this facility and shall continue quarterly toxicity testing for the remainder of the permit term using *C. dubia* and *P. promelas* as the test species.

21. Other Special Conditions:

- a) O&M Manual Requirement. Required by VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall submit for approval an Operations and Maintenance (O&M) Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) 90 days prior to commencement of discharge from Outfall 001 to surface waters. Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- b) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9VAC25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.
- c) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, in the event of a discharge to surface waters the permittee is required to analyze the facility's effluent at Outfall 001 for the substances noted in Attachment A of this VPDES permit. Using Attachment A as the reporting form, the data shall be submitted with the next application for reissuance, which is due at least 180 days prior to the expiration date of this permit.

- d) Notification Levels. The permittee shall notify the Department as soon as they know or have reason to believe:
- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter;
 - (2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
 - (3) Five times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
 - b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) Five hundred micrograms per liter;
 - (2) One milligram per liter for antimony;
 - (3) Ten times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
- e) Materials Handling/Storage. 9VAC25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.
- f) Cooling Tower Systems. The permittee shall at all times properly operate and maintain all cooling water systems.
- g) Cooling Tower Blowdown. The discharge of cooling tower blowdown is prohibited for three (3) consecutive days after the cooling tower receives shock treatment with non-oxidizing biocide.
- h) Cooling Tower Additives. The use of any chemical additive(s) not identified in the registration statement, except chlorine, is prohibited without prior approval of DEQ-NRO. Prior approval shall be obtained from DEQ-NRO before any changes are made to the chemical and/or non-chemical treatment technology employed in the cooling water system. Requests for approval of the change shall be made in writing and shall include the following information:
- a. Describe the chemical and/or non-chemical treatment to be employed and its purpose; if chemical additives are used, provide the information prescribed below;
 - b. Provide the name and manufacturer of each additive used;
 - c. Provide a list of active ingredients and percentage consumption;
 - d. Provide the proposed schedule and quantity of chemical usage, and estimate the concentration in the discharge;
 - e. Attach available aquatic toxicity information for each additive proposed for use; and
 - f. Attach any other information such as product or constituent degradation, fate, transport, synergies, bioavailability, etc. that will aid the Board with the toxicity evaluation for the discharge.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

22. Changes to the Permit from the Previously Issued Permit:

- a) Special Conditions:
 - 1. A Cooling Tower Additives special condition was added with this reissuance to be consistent with the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196).
 - 2. The Nutrient Reopener special condition was removed with this reissuance as the discharge is not domestic in nature.
- b) Monitoring and Effluent Limitations:
 - 1. A statement clarifying that the TRC limitations are only applicable if the source water is chlorinated was added to be consistent with the VPDES General Permit for Non-Contact Cooling Water Discharges (9VAC25-196).
 - 2. The monitoring frequency for TRC was maintained at monthly, but monitoring and reporting shall now only be applicable upon commencement of discharge. There are no plans for discharge during the 2011 – 2016 permit term.
 - 3. The monitoring frequency for metals was maintained at monthly, but monitoring and reporting shall now only be applicable upon commencement of discharge. There are no plans for discharge during the 2011 – 2016 permit term.
 - 4. The monitoring frequency for pH was maintained at monthly, but monitoring and reporting shall now only be applicable upon commencement of discharge. There are no plans for discharge during the 2011 – 2016 permit term.
 - 5. The monitoring frequency for temperature was maintained at monthly, but monitoring and reporting shall now only be applicable upon commencement of discharge. There are no plans for discharge during the 2011 – 2016 permit term.
 - 6. The monitoring frequency for total hardness was maintained at monthly, but monitoring and reporting shall now only be applicable upon commencement of discharge. There are no plans for discharge during the 2011 – 2016 permit term.
 - 7. The monitoring frequency for phosphorus was maintained at monthly, but monitoring and reporting shall now only be applicable upon commencement of discharge. There are no plans for discharge during the 2011 – 2016 permit term.
 - 8. WET requirements have been modified from semi-annual to quarterly in accordance with current agency guidance as the facility has not had a discharge to surface waters.

23. Variances/Alternate Limits or Conditions: NA**24. Public Notice Information:**

First Public Notice Date: October 7, 2011

Second Public Notice Date: October 14, 2011

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3853, susan.mackert@deq.virginia.gov. See Attachment 7 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the

DEQ Northern Regional Office by appointment.

25. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

The receiving stream, an unnamed tributary to Mills Branch, is not listed on the current 303(d) list. However, there are downstream listed 303(d) impairments for Mills Branch and the tidal portion of the Occoquan River that receives flow from Mills Branch. The recreation use and fish consumption uses are deemed not supporting.

TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

26. Additional Comments:

Previous Board Action(s): None

Staff Comments: The planning statement prepared for the permit reissuance indicates that one drinking water intake is located within a five mile radius of the facility. This intake is located above the proposed discharge location for Covanta Fairfax, and as such, the facility's discharge would have no impact on this intake. Additionally, comments from the Virginia Department of Health indicate that there are no public water supplies that will be impacted by the discharge point or project activities. Therefore, Factor 4 of the facility's NPDES Permit Rating Worksheet (Attachment 1) shall continue to be checked "no" in that there are no public drinking water supplies located within 50 miles downstream of the effluent discharge.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in Attachment 8.

Fact Sheet Attachments – Table of Contents

Covanta Fairfax, Incorporated
VA0090638

2011 Reissuance

Attachment 1	NPDES Permit Rating Worksheet
Attachment 2	Facility Flow Diagram
Attachment 3	Topographic Map
Attachment 4	Waterbody Discharges
Attachment 5	Site Visit Memorandum
Attachment 6	Wasteload Allocation Analysis – Limit Derivation
Attachment 7	Public Notice
Attachment 8	EPA Checklist

NPDES PERMIT RATING WORK SHEET

VPDES NO. : VA0090638

- ☒ Regular Addition
☐ Discretionary Addition
☐ Score change, but no status Change
☐ Deletion

Facility Name: Covanta Fairfax, Incorporated

City / County: Lorton / Fairfax County

Receiving Water: UT to Mills Branch

Waterbody ID: VAN-A25R

Is this facility a steam electric power plant (sic =4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
 2. A nuclear power Plant
 3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rater

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

- ☐ YES; score is 700 (stop here)
☒ NO; (continue)

☐ Yes; score is 600 (stop here) ☒ NO; (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: _____ Primary Sic Code: 4953 Other Sic Codes: _____
 Industrial Subcategory Code: 000 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	15	<input checked="" type="checkbox"/> 7.	7	35
<input type="checkbox"/> 1.	1	5	<input type="checkbox"/> 4.	4	20	<input type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input type="checkbox"/> 9.	9	45
			<input type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50
Code Number Checked: 7								
Total Points Factor 1: 35								

FACTOR 2: Flow/Stream Flow Volume (Complete either Section A or Section B; check only one)

Section A – Wastewater Flow Only considered

Wastewater Type (see Instructions)	Code	Points
Type I: Flow < 5 MGD	<input type="checkbox"/> 11	0
Flow 5 to 10 MGD	<input type="checkbox"/> 12	10
Flow > 10 to 50 MGD	<input type="checkbox"/> 13	20
Flow > 50 MGD	<input type="checkbox"/> 14	30
Type II: Flow < 1 MGD	<input type="checkbox"/> 21	10
Flow 1 to 5 MGD	<input type="checkbox"/> 22	20
Flow > 5 to 10 MGD	<input type="checkbox"/> 23	30
Flow > 10 MGD	<input type="checkbox"/> 24	50
Type III: Flow < 1 MGD	<input checked="" type="checkbox"/> 31	0
Flow 1 to 5 MGD	<input type="checkbox"/> 32	10
Flow > 5 to 10 MGD	<input type="checkbox"/> 33	20
Flow > 10 MGD	<input type="checkbox"/> 34	30

Section B – Wastewater and Stream Flow Considered

Wastewater Type (see Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow	Code	Points
Type I/III:	< 10 %	<input type="checkbox"/> 41	0
	10 % to < 50 %	<input type="checkbox"/> 42	10
	> 50%	<input type="checkbox"/> 43	20
Type II:	< 10 %	<input type="checkbox"/> 51	0
	10 % to < 50 %	<input type="checkbox"/> 52	20
	> 50 %	<input type="checkbox"/> 53	30

Code Checked from Section A or B: 31
 Total Points Factor 2: 0

NPDES PERMIT RATING WORK SHEET

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (check one) ☐ BOD ☐ COD ☐ Other: _____

Permit Limits: (check one)

		Code	Points
<input type="checkbox"/>	< 100 lbs/day	1	0
<input type="checkbox"/>	100 to 1000 lbs/day	2	5
<input type="checkbox"/>	> 1000 to 3000 lbs/day	3	15
<input type="checkbox"/>	> 3000 lbs/day	4	20

Code Number Checked: NA**Points Scored:** 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one)

		Code	Points
<input type="checkbox"/>	< 100 lbs/day	1	0
<input type="checkbox"/>	100 to 1000 lbs/day	2	5
<input type="checkbox"/>	> 1000 to 5000 lbs/day	3	15
<input type="checkbox"/>	> 5000 lbs/day	4	20

Code Number Checked: NA**Points Scored:** 0C. Nitrogen Pollutants: (check one) ☐ Ammonia ☐ Other: _____

Permit Limits: (check one)

	<i>Nitrogen Equivalent</i>	Code	Points
<input type="checkbox"/>	< 300 lbs/day	1	0
<input type="checkbox"/>	300 to 1000 lbs/day	2	5
<input type="checkbox"/>	> 1000 to 3000 lbs/day	3	15
<input type="checkbox"/>	> 3000 lbs/day	4	20

Code Number Checked: NA**Points Scored:** 0**Total Points Factor 3:** 0**FACTOR 4: Public Health Impact**

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this include any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above reference supply.

☐ YES; (If yes, check toxicity potential number below)☒ NO; (If no, go to Factor 5)

Determine the *Human Health* potential from Appendix A. Use the same SIC doe and subcategory reference as in Factor 1. (Be sure to use the *Human Health* toxicity group column – check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	0	<input type="checkbox"/> 7.	7	15
<input type="checkbox"/> 1.	1	0	<input type="checkbox"/> 4.	4	0	<input type="checkbox"/> 8.	8	20
<input type="checkbox"/> 2.	2	0	<input type="checkbox"/> 5.	5	5	<input type="checkbox"/> 9.	9	25
			<input type="checkbox"/> 6.	6	10	<input type="checkbox"/> 10.	10	30

Code Number Checked: NA**Total Points Factor 4:** 0

NPDES PERMIT RATING WORK SHEET

FACTOR 5: Water Quality Factors

- A. *Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-base federal effluent guidelines, or technology-base state effluent guidelines), or has a wasteload allocation been to the discharge*

	Code	Points
<input checked="" type="checkbox"/> YES	1	10
<input type="checkbox"/> NO	2	0

- B. *Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

	Code	Points
<input checked="" type="checkbox"/> YES	1	0
<input type="checkbox"/> NO	2	5

- C. *Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

	Code	Points
<input checked="" type="checkbox"/> YES	1	10
<input type="checkbox"/> NO	2	0

Code Number Checked: A 1 B 1 C 1
Points Factor 5: A 10 + B 0 + C 10 = 20

FACTOR 6: Proximity to Near Coastal Waters

- A. Base Score: Enter flow code here (from factor 2) 31

Check appropriate facility HPRI code (from PCS):

HPRI#	Code	HPRI Score
<input type="checkbox"/> 1	1	20
<input type="checkbox"/> 2	2	0
<input checked="" type="checkbox"/> 3	3	30
<input type="checkbox"/> 4	4	0
<input type="checkbox"/> 5	5	20

HPRI code checked : 3

Base Score (HPRI Score): 30 X (Multiplication Factor) 0.00 = 0

Enter the multiplication factor that corresponds to the flow code: 0.00

Flow Code	Multiplication Factor
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

- B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

Code	Points
<input checked="" type="checkbox"/> 1	10
<input type="checkbox"/> 2	0

- C. Additional Points – Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 area's of concern (see instructions)?

Code	Points
<input type="checkbox"/> 1	10
<input checked="" type="checkbox"/> 2	0

Code Number Checked: A 3 B 1 C 2
Points Factor 6: A 0 + B 10 + C 0 = 10

NPDES PERMIT RATING WORK SHEET

SCORE SUMMARY

<u>Factor</u>	<u>Description</u>	<u>Total Points</u>
1	Toxic Pollutant Potential	35
2	Flows / Streamflow Volume	0
3	Conventional Pollutants	0
4	Public Health Impacts	0
5	Water Quality Factors	20
6	Proximity to Near Coastal Waters	10
TOTAL (Factors 1 through 6)		65

S1. Is the total score equal to or greater than 80 ☐ YES; (Facility is a Major) ☒ NO

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

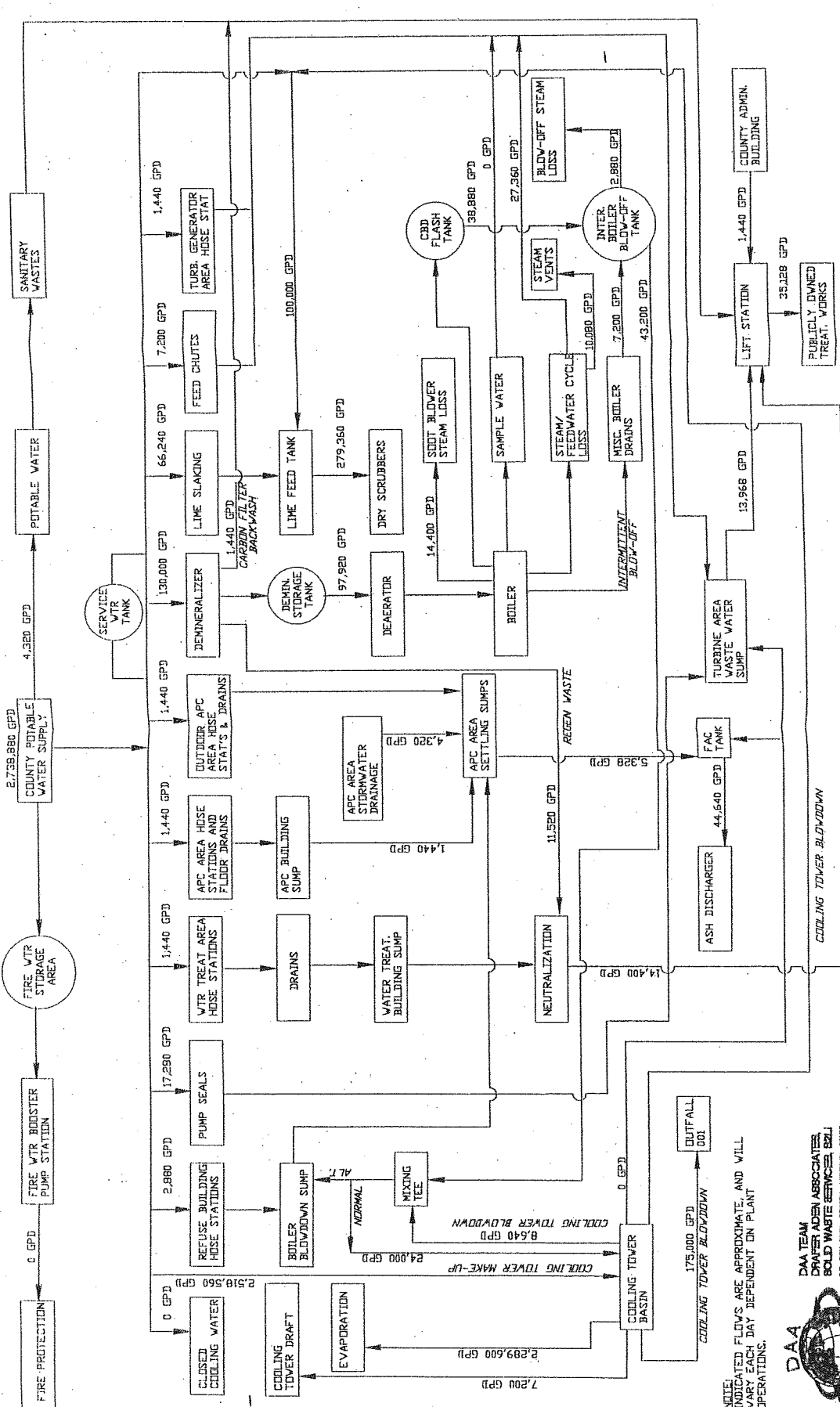
☒ NO

☐ YES; (Add 500 points to the above score and provide reason below)

Reason:

NEW SCORE : 65
OLD SCORE : 65

Permit Reviewer's Name : Susan Mackert
Phone Number: (703) 583-3853
Date: August 18, 2011

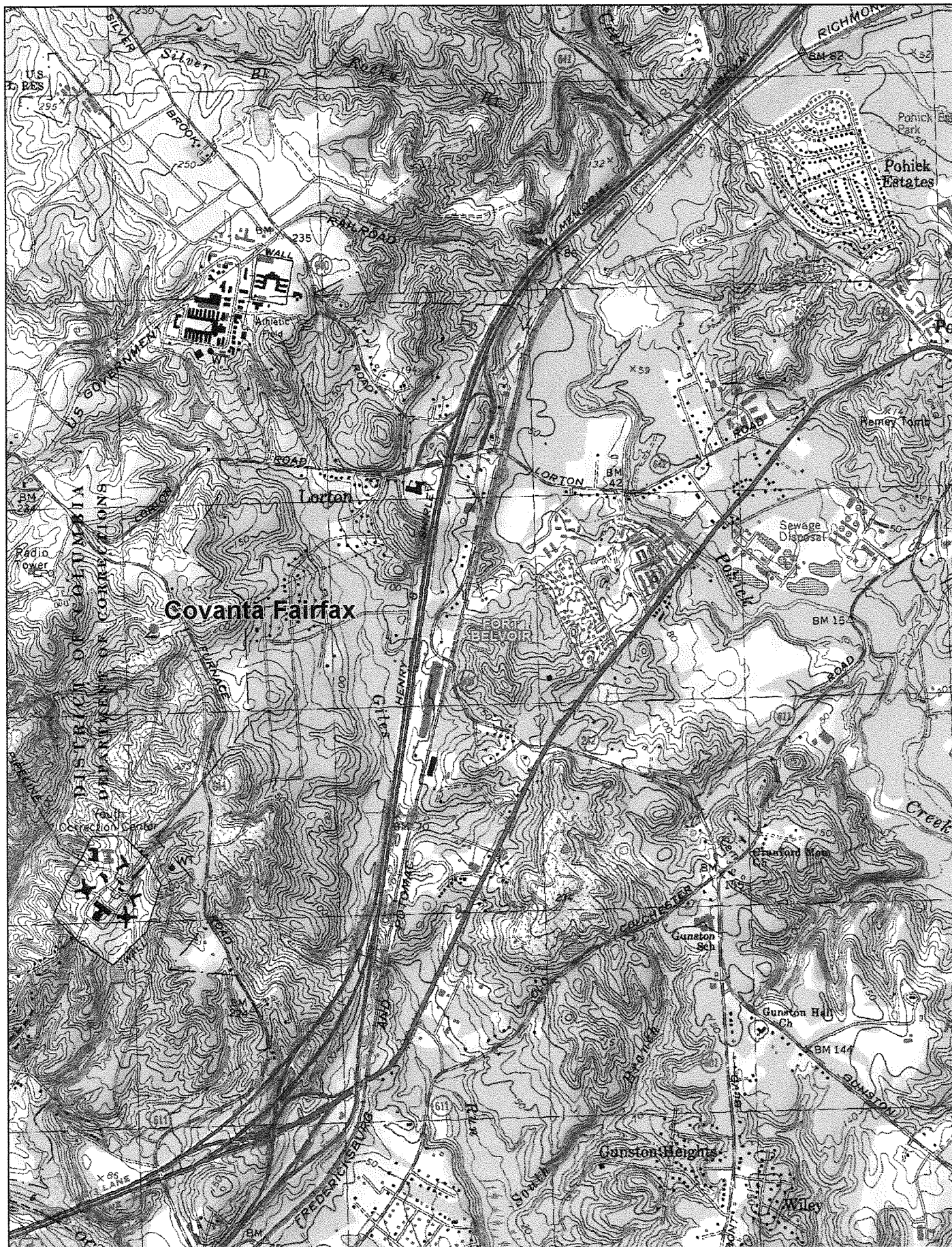


NOTE: INDICATED FLOWS ARE APPROXIMATE, AND WILL VARY EACH DAY DEPENDENT ON PLANT OPERATIONS.



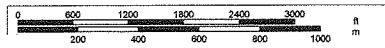
DAA TEAM
DRAFTER ADEN ASSOCIATES,
SOLID WASTE SERVICES, 8211
P.O. BOX 8077, RESTON, VIRGINIA 20195
PHONE: (703) 854-0711
FAX: (703) 854-0182
EMAIL: SW@DAA-TEAM.COM

WATER BALANCE AND FLOW DIAGRAM
 WPDES PERMIT APPLICATION



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www.delorme.com

Scale 1 : 25,000
1" = 2080 ft



The facilities listed below either discharge to or are located within the waterbody VAN-A25R, and discharge to a receiving stream other than Mills Branch or an unnamed tributary to Mills Branch.

VA0023299	Gunston Elementary School (South Branch Massey Creek)
VA0024678	Dale Service Corporation – Section 8 (Neabsco Creek, UT)
VA0024724	Dale Service Corporation – Section 1 (Neabsco Creek, UT)
VA0027855	Woodbridge Mobile Home Park STP (Marumsco Creek, UT)
VA0090026	Kim J. Young STP (Thompson's Creek, UT)
VAG406093	Marie M. Allen Residence (Belmont Bay)
VAG406104	Belmont Bay Associates, LC (Belmont Bay)
VAG840101	Vulcan Construction Materials – Graham (Occoquan River, UT and Little Occoquan Run, UT)
VAG110083	Virginia Concrete – Woodbridge (Occoquan River)
VAG110085	Virginia Concrete – Lorton (Giles Run, UT)
VAR051006	AAAACO Auto Parts (Giles Run)
VAR051076	Interstate 95 Landfill (Giles Run)
VAR051079	Lorton CDD Landfill (Giles Run, UT)
VAR051081	Rainwater Landfill (Giles Run, UT)
VAR051083	Owen and Sparrow LLC (Giles Run)
VAR051477	First Transit Incorporated (Neabsco Creek)
VAR051811	Davis Industries (Giles Run)
VAR051939	American Auto Salvage (Marumsco Creek, UT)
VAR052014	Double T Automotive (Cow Branch)

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court

Woodbridge, VA 22193

SUBJECT: Reissuance Site Visit
Covanta Fairfax, Incorporated (VA0090638)

TO: Permit Reissuance File

FROM: Susan Mackert

DATE: July 28, 2011

COPIES:

A site visit was performed on July 28, 2011, to verify information provided in the facility's permit reapplication package. Information provided in the reapplication package was found representative of actual site conditions.

Covanta Fairfax is an Energy from Waste (EfW) facility that produces energy through the combustion of municipal solid waste (MSW). The facility generates approximately 79MW of electricity which is then sold to Dominion Virginia Power.

The majority of MSW used by the facility is received from the surrounding Fairfax County communities and the District of Columbia. MSW arrives at the facility by truck and is first weighed and visually screened at the scale house. The MSW is then transported to the tipping floor where it is unloaded and stacked to prevent falling and mixture of fuel. An overhead crane and grapple system picks the MSW from the tipping floor and moves it to one of four feed chutes where the MSW is moved by gravity to reciprocating grates and to the combustors. Under fire and over fire air supports the combustion of the MSW which heats the boilers and produces steam. The pressure and temperature of the steam is increased and directed to the turbines to make electricity.

Potable water from Fairfax County (Lorton/Griffith Water Treatment Plant – VA0002585) is currently used for cooling and steam generation. However, at the time of the site visit the facility was nearing completion of a reuse project with the Noman M. Cole Jr. Pollution Control Plant (VA0025364). This project will allow Covanta Fairfax to utilize treated effluent from the Noman M. Cole Jr. Pollution Control Plant as source water. The project is scheduled for completion in fall 2011. Chemicals are added to both cooling water and boiler feed water to maintain optimal heat transfer efficiency of electric generation systems. Chemicals are added to the water to adjust pH, inhibit corrosion and scale build-up, and to reduce biological growth.

Discharge from the facility is comprised of cooling tower blowdown, neutralization tank discharge and once through cooling water. At this time, all discharge from the facility is sent to the Noman M. Cole Jr. Pollution Control Plant via a lift station and is not discharged through the facility's permitted outfall (001). This has been the practice of the facility since it went online in 1990. Thus the facility has not had a reported discharge during the current permit cycle. Based on information provided by the facility, it does not appear likely that a discharge will occur through Outfall 001 under the proposed permit.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Covanta - Fairfax Permit No.: VA0090638
 Receiving Stream: UT to Mills Branch
 Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO3) =		mg/L	1Q10 (Annual) =	0 MGD		Annual - 1Q10 Mix =	100 %		Mean Hardness (as CaCO3) =	50 mg/L	
90% Temperature (Annual) =		deg C	7Q10 (Annual) =	0 MGD		- 7Q10 Mix =	100 %		90% Temp (Annual) =	8 deg C	
90% Temperature (Wet season) =		deg C	3Q10 (Annual) =	0 MGD		- 3Q10 Mix =	100 %		90% Temp (Wet season) =	deg C	
90% Maximum pH =		SU	1Q10 (Wet season) =	0 MGD		Wet Season - 1Q10 Mix =	100 %		90% Maximum pH =	25 SU	
10% Maximum pH =		SU	3Q10 (Wet season) =	0 MGD		- 3Q10 Mix =	100 %		10% Maximum pH =	SU	
Tier Designation (1 or 2) =	1		3Q05 =	0 MGD					Discharge Flow =	0.66 MGD	
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0 MGD							
Trout Present Y/N? =	n										
Early Life Stages Present Y/N? =	y										

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	5	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	na
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	na
Acrylonitrile ^c	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	na
Aldrin ^c	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	3.0E+00	--	na
Ammonia-N (mg/l) (Yearly)	0	1.32E+00	4.86E-01	na	--	1.32E+00	4.86E-01	na	--	--	--	--	--	1.32E+00	4.86E-01	na
Ammonia-N (mg/l) (High Flow)	0	1.32E+00	4.86E-01	na	--	1.32E+00	4.86E-01	na	--	--	--	--	--	1.32E+00	4.86E-01	na
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	na
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	na
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	3.4E+02	1.5E+02	na
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Benzene ^c	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	na
Benzidine ^c	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	na
Benzo (a) anthracene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (b) fluoranthene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (k) fluoranthene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (a) pyrene ^c	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	na
Bis(2-Chloroethyl) Ether ^c	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	na
Bis(2-Chloroisopropyl) Ether	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	na
Bis 2-Ethylhexyl Phthalate ^c	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	na
Bromoform ^c	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	na
Butylbenzylphthalate	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	1.8E+00	6.6E-01	na
Cadmium	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	na
Carbon Tetrachloride ^c	0	--	--	na	8.1E-03	--	--	na	8.1E-03	--	--	--	--	--	--	na
Chlordane ^c	0	2.4E+00	4.3E-03	na	--	2.4E+00	4.3E-03	na	--	--	--	--	--	2.4E+00	4.3E-03	na
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	8.6E+05	2.3E+05	na
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	1.9E+01	1.1E+01	na
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	na

Parameter (ug/L unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Chlorobromomethane ^g	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	na
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	na
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	na
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	na
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	8.3E-02	4.1E-02	na
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	3.2E+02	4.2E+01	na
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	1.6E+01	1.1E+01	na
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	na
Chrysene ^c	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	na
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	7.0E+00	5.0E+00	na
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	2.2E+01	5.2E+00	na
DDD ^c	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	na
DDE ^c	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	na
DDT ^c	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	1.1E+00	1.0E-03	na
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	1.0E-01	na
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	1.7E-01	1.7E-01	na
Dibenz(a,h)anthracene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	na
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	na
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	na
3,3-Dichlorobenzidine ^g	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	na
Dichlorobromomethane ^g	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	na
1,2-Dichloroethane ^c	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	na
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	na
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	na
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	na
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
1,2-Dichloropropane ^g	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	na
1,3-Dichloropropene ^g	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	na
Dieldrin ^c	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	2.4E-01	5.6E-02	na
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	na
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	na
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	na
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	na
2,4-Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	na
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	na
2,4-Dinitrotoluene ^c	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	na
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	na
1,2-Diphenylhydrazine ^g	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	na
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	2.2E-01	5.6E-02	na
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	2.2E-01	5.6E-02	na
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	2.2E-01	5.6E-02	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	na
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	8.6E-02	3.6E-02	na
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	na
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	na
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	na
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	1.0E-02	na
Heptachlor ^c	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	5.2E-01	3.8E-03	na
Heptachlor Epoxide ^d	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	5.2E-01	3.8E-03	na
Hexachlorobenzene ^d	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	na
Hexachlorobutadiene ^d	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	na
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	na
Alpha-BHC ^c	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	na
Hexachlorocyclohexane	0	--	--	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	9.5E-01	--	na
Beta-BHC ^c	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	na
Hexachlorocyclohexane	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	na
Gamma-BHC ^c (Lindane)	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	2.0E+00	na
Hexachlorocyclopentadiene	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Hexachloroethane ^d	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Hydrogen Sulfide	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	na
Indeno (1,2,3-cd) pyrene ^c	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	0.0E+00	na
Iron	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	--	--	4.9E+01	5.6E+00	na
Isophorone ^d	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	1.0E-01	na
Kepone	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Lead	0	--	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--
Malathion	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	na
Manganese	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	na
Mercury	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	1.0E+02	1.1E+01	na
Methyl Bromide	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Methylene Chloride ^c	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	na
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	3.0E-02	--	--	--	3.0E-02	na
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	--	--	--	0.0E+00	na
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	1.0E+02	1.1E+01	na
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	na
N-Nitrosodimethylamine ^d	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	na
N-Nitrosodiphenylamine ^d	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	na
N-Nitrosodi-n-propylamine ^d	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	na
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	--	--	6.5E-02	1.3E-02	na
PCB Total ^c	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	1.4E-02	na
Pentachlorophenol ^c	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	7.7E-03	5.9E-03	na
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	na
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	na
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Radium 226 + 228 (pCi/L)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	na
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	2.0E+01	5.0E+00	na
Silver	0	1.0E+00	--	na	1.0E+00	--	na	--	--	--	--	--	--	1.0E+00	--	na
Sulfate	0	--	--	na	--	--	na	--	--	--	--	--	--	--	--	na
1,1,2,2-Tetrachloroethane ^g	0	--	--	na	4.0E+01	--	na	4.0E+01	--	--	--	--	--	--	--	na
Tetrachloroethylene ^g	0	--	--	na	3.3E+01	--	na	3.3E+01	--	--	--	--	--	--	--	na
Thallium	0	--	--	na	4.7E-01	--	na	4.7E-01	--	--	--	--	--	--	--	na
Toluene	0	--	--	na	6.0E+03	--	na	6.0E+03	--	--	--	--	--	--	--	na
Total dissolved solids	0	--	--	na	--	--	na	--	--	--	--	--	--	--	--	na
Toxaphene ^c	0	7.3E-01	2.0E-04	na	2.8E-03	2.0E-04	na	2.8E-03	--	--	--	--	--	7.3E-01	2.0E-04	na
Tributyltin	0	4.6E-01	7.2E-02	na	--	7.2E-02	na	--	--	--	--	--	--	4.6E-01	7.2E-02	na
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	na	7.0E+01	--	--	--	--	--	--	--	na
1,1,2-Trichloroethane ^g	0	--	--	na	1.6E+02	--	na	1.6E+02	--	--	--	--	--	--	--	na
Trichloroethylene ^c	0	--	--	na	3.0E+02	--	na	3.0E+02	--	--	--	--	--	--	--	na
2,4,6-Trichloropheno ^c	0	--	--	na	2.4E+01	--	na	2.4E+01	--	--	--	--	--	--	--	na
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)	0	--	--	na	--	--	na	--	--	--	--	--	--	--	--	na
Vinyl Chloride ^g	0	--	--	na	2.4E+01	--	na	--	--	--	--	--	--	--	--	na
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	na	2.6E+04	--	--	--	--	--	6.5E+01	6.6E+01	na

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
6. Antidegradation WLAs are based upon a complete mix.
Antidegrad. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

8/18/2011 8:00:48 AM

Facility = Covanta - Fairfax
Chemical = Chlorine
Chronic averaging period = 4
WLAa = 0.019
WLAc = 0.011
Q.L. = 0.1
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = .2
Variance = .0144
C.V. = 0.6
97th percentile daily values = .486683
97th percentile 4 day average = .332758
97th percentile 30 day average = .241210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 1.60883226245855E-02
Average Weekly limit = 1.60883226245855E-02
Average Monthly Limit = 1.60883226245855E-02

The data are:

0.2

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of industrial wastewater into a water body in Fairfax County, Virginia.

PUBLIC COMMENT PERIOD: October 8, 2011 to 5:00 p.m. on November 7, 2011

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Industrial Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Covanta Energy, 9898 Furnace Road, Lorton, VA 22079, VA0090638

NAME AND ADDRESS OF FACILITY: Covanta Fairfax, 9898 Furnace Road, Lorton, VA 22079
This facility is an Extraordinary Environmental Enterprise participant in Virginia's Environmental Excellence Program.

PROJECT DESCRIPTION: Covanta Energy has applied for a reissuance of a permit for the private Covanta Fairfax. The applicant proposes to release industrial wastewater at a maximum rate of 0.66 million gallons per day into a water body. The facility proposes to release the industrial wastewater into an unnamed tributary to Mills Branch in Fairfax County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, Temperature, and Total Residual Chlorine. The permit will also require monitoring for Hardness, Total Dissolved Copper, Total Dissolved Zinc, Total Phosphorus, and Acute and Chronic Toxicity using *C. dubia* and *P. promelas*.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Susan Mackert

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3853 E-mail: susan.mackert@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Covanta Fairfax, Incorporated
NPDES Permit Number:	VA0090638
Permit Writer Name:	Susan Mackert
Date:	August 18, 2011

Major []

Minor [X]

Industrial [X]

Municipal []

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?	X		

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water? (downstream impairment)	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?		X	
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
10. Does the permit authorize discharges of storm water?		X	
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?		X	
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			X
b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			X
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?	X		
3. Does the fact sheet adequately document the calculations used to develop both ELG and/or BPJ technology-based effluent limits?	X		
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)?			X
5. Does the permit contain “tiered” limits that reflect projected increases in production or flow?		X	
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?			X
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?			X
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		X	

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?		X	
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the fact sheet indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

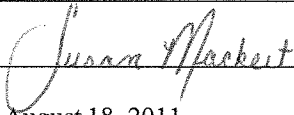
II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State’s standard practices?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?		X	
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?			X
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?		X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Susan Mackert</u>
Title	<u>Environmental Specialist II Senior</u>
Signature	<u></u>
Date	<u>August 18, 2011</u>